item with each hand, the detected weight decrease may be indicative of two items being removed from the post-scan area **17**. If the post-scan scale **20** detects a weight decrease, the routine **56** advances to step **182**. If the post-scan scale **20** does not detect a weight decrease, the routine **56** loops back to step **74**.

In step **182**, the processing unit **26** updates the weight history table. More specifically, the processing unit **26** generates an output signal which is sent to the memory device **27** which causes the weight history table to be updated in the memory device **27** to set the value of D_y to the value of the weight decrease detected by the post-scan scale **20** in step **80**. For example, if the post-scan scale **20** detected a weight decrease of 10 ounces in step **80**, the processing unit **26** causes the weight history table to be updated such that D_y=10 ounces. The routine **56** then advances to the verification subroutine **106** in the manner previously discussed.

Returning now to step **68**, if the post-scan scale **20** does not detect a weight decrease, the routine advances to step **72**. Step **72** follows the same procedure outlined above in regard to step **76**. In particular, the processing unit **26** determines if the user placed an item or items into the post-scan area **17**. More specifically, the post-scan scale **20** generates an output signal indicative of the measured weight of the item which is sent to the processing unit **26** once the post-scan scale **20** detects a weight increase associated with an item or items being placed either (1) on the post-scan shelf **42***b*, or (2) into one of the grocery bags **40**. If a weight increase is detected by the post-scan scale **20**, the processing unit **26** concludes that an item or items have been placed in the post-scan area **17** without having first been entered into the self-service checkout terminal **10**. This is true since the user apparently did not enter an item (step **64**) or remove an item from the post-scan area **17** (step **68**), yet an item or items were placed in the post-scan area **17**. Hence, if a weight increase is detected by the post-scan scale **20**, an improper-use control signal is generated and the routine **56** advances to step **184**. If the post-scan scale **20** does not detect a weight increase, the processing unit **26** concludes that there is no present user activity associated with the self-service checkout terminal **10** since the user is apparently not entering an item (step **64**) or removing or placing items from/into the post-scan area **17** (steps **68**, **72**, respectively) thereby causing the routine **56** to loop back to step **62**.

In step **184**, the processing unit **26** increments the appropriate event logs and the aggregate log by a predetermined value. In particular, the processing unit **26** generates an output signal which is sent to the memory device **27** which causes the appropriate event logs and the aggregate log to be incremented in the memory device **27** by a predetermined value. Thereafter, the processing unit **26** compares the various event logs and the aggregate log to their respective threshold values in order to determine if any of the event logs have a predetermined relationship therewith. In particular, if the respective value of any of the event logs and/or the aggregate log equals or exceeds its respective threshold value, an intervention control signal is generated and appropriate store personnel is paged or otherwise summoned to intervene in the user's transaction. If after such intervention the user's transaction is permitted to continue, the routine **56** returns to step **62**. It should be appreciated that store personnel may not allow the user's transaction to continue (e.g. if it is determined that the user intentionally operated the terminal **10** improperly to commit an impropriety such as theft) thereby causing the routine **56** to end which in turn causes the routine **50** (see FIG. 4) to return to step **52** in which the self-service checkout terminal **10** will remain idle until initialized by a subsequent user.

While the invention has been illustrated and described in detail in the drawings and foregoing description, such an illustration and description is to be considered as exemplary and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all changes and modifications that come within the spirit of the invention are desired to be protected.

What is claimed is:

1. A method of monitoring item shuffling in a post-scan area of a self-service checkout terminal, with the post-scan area including a post-scan surface, comprising the steps of:

detecting removal of a first number of items from the post-scan surface and generating a first weight decrease value in response thereto which corresponds to the weight of the first number of items;

detecting placement of a second number of items onto the post-scan surface and generating a first weight increase value in response thereto which corresponds to the weight of the second number of items; and

comparing the first weight decrease value to the first weight increase value and generating a first match control signal in response thereto if the first weight decrease value matches the first weight increase value.

2. The method of claim 1, further comprising the step of:

generating an improper-use control signal if the first weight increase value (i) does not match the first weight decrease value, and (ii) is greater than the first weight decrease value.

3. The method of claim 2, further comprising the steps of:

updating an electronic log value in response to generation of the improper-use control signal; and

comparing the electronic log value to a log threshold and generating an intervention signal in response thereto if the electronic log value has a predetermined relationship to the log threshold.

4. The method of claim 1, further comprising the steps of:

detecting placement of a third number of items onto the post-scan surface and generating a second weight increase value in response thereto which corresponds to the weight of the third number of items; and

comparing the first weight decrease value to a sum of the first weight increase value and the second weight increase value and generating a second match control signal in response thereto if the first weight decrease value matches the sum of the first weight increase value and the second weight increase value.

5. The method of claim 4, further comprising the steps of:

generating an improper-use control signal if the first weight decrease value does not match the sum of the first weight increase value and the second weight increase value.

6. The method of claim 5, further comprising the steps of:

updating an electronic log value in response to generation of the improper-use control signal; and

comparing the electronic log value to a log threshold and generating an intervention signal in response thereto if the electronic log value has a predetermined relationship to the log threshold.

7. The method of claim 4, further comprising the steps of:

generating an item-displaced control signal if the first weight increase value (i) does not match the first weight decrease value, and (ii) is less than the first weight decrease value;

generating an item-entered control signal if the user enters a subsequent item into the self-service checkout terminal; and

generating an improper-use control signal if the item-entered control signal is generated (i) subsequent to generation of the item-displaced control signal, and (ii) prior to generation of the second match control signal.

8. The method of claim 7, further comprising the steps of:

updating an electronic log value in response to generation of the improper-use control signal; and

comparing the electronic log value to a log threshold and generating an intervention signal in response thereto if the electronic log value has a predetermined relationship to the log threshold.

9. The method of claim 1, further comprising the steps of:

detecting removal of a third number of items from the post-scan surface and generating a second weight decrease value in response thereto which corresponds to the weight of the third number of items; and

comparing the sum of the first weight decrease value and the second weight decrease value to the first weight increase value and generating a second match control signal in response thereto if the sum of the first weight decrease value and the second weight decrease value matches the first weight increase value.

10. The method of claim 1, wherein:

the post-scan surface includes (i) a post-scan shelf, and (ii) a bagwell having a grocery container positioned therein,

a weight scale is positioned so as to detect weight of items positioned both on the post-scan shelf and in the grocery container,

the removal detecting step includes the step of detecting removal of the first number of items from the post-scan shelf with the weight scale, and

the placement detecting step includes the step of detecting placement of the second number of items into the grocery container with the weight scale.

11. The method of claim 1, wherein:

a weight scale is positioned so as to detect weight of items positioned on the post-scan surface,

the removal detecting step includes the step of detecting removal of the first number of items from the post-scan surface with the weight scale, and

the placement detecting step includes the step of detecting placement of the second number of items onto the post-scan surface with the weight scale.

12. A method of monitoring item shuffling in a post-scan area of a self-service checkout terminal having (i) a post-scan shelf, (ii) a bagwell with a grocery container positioned therein, and (iii) a weight scale positioned so as to detect weight of items positioned both on the post-scan shelf and in the grocery container, comprising the steps of:

detecting removal of a first number of items from the post-scan shelf with the weight scale and generating a first weight decrease value in response thereto which corresponds to the weight of the first number of items;

detecting placement of a second number of items into the grocery container with the weight scale and generating a first weight increase value in response thereto which corresponds to the weight of the second number of items; and

comparing the first weight decrease value to the first weight increase value and generating a first match control signal in response thereto if the first weight decrease value matches the first weight increase value.

13. The method of claim 12, further comprising the step of:

generating an improper-use control signal if the first weight increase value (i) does not match the first weight decrease value, and (ii) is greater than the first weight decrease value.

14. The method of claim 13, further comprising the steps of:

updating an electronic log value in response to generation of the improper-use control signal; and

comparing the electronic log value to a log threshold and generating an intervention signal in response thereto if the electronic log value has a predetermined relationship to the log threshold.

15. The method of claim 12, further comprising the steps of:

detecting placement of a third number of items into the grocery container and generating a second weight increase value in response thereto which corresponds to the weight of the third number of items; and

comparing the first weight decrease value to a sum of the first weight increase value and the second weight increase value and generating a second match control signal in response thereto if the first weight decrease value matches the sum of the first weight increase value and the second weight increase value.

16. The method of claim 15, further comprising the steps of:

generating an improper-use control signal if the first weight decrease value does not match the sum of the first weight increase value and the second weight increase value.

17. The method of claim 16, further comprising the steps of:

updating an electronic log value in response to generation of the improper-use control signal; and

comparing the electronic log value to a log threshold and generating an intervention signal in response thereto if the electronic log value has a predetermined relationship to the log threshold.

18. The method of claim 15, further comprising the steps of:

generating an item-displaced control signal if the first weight increase value (i) does not match the first weight decrease value, and (ii) is less than the first weight decrease value;

generating an item-entered control signal if the user enters a subsequent item into the self-service checkout terminal; and

generating an improper-use control signal if the item-entered control signal is generated (i) subsequent to generation of the item-displaced control signal, and (ii) prior to generation of the second match control signal.

19. The method of claim 18, further comprising the steps of:

updating an electronic log value in response to generation of the improper-use control signal; and

comparing the electronic log value to a log threshold and generating an intervention signal in response thereto if the electronic log value has a predetermined relationship to the log threshold.

20. The method of claim 12, further comprising the steps of:

detecting removal of a third number of items from the post-scan shelf and generating a second weight decrease value in response thereto which corresponds to the weight of the third number of items; and

comparing the sum of the first weight decrease value and the second weight decrease value to the first weight

increase value and generating a second match control signal in response thereto if the sum of the first weight decrease value and the second weight decrease value matches the first weight increase value.

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